AMENDMENTS TO THE CLAIMS

1. (Currently amended) A communication system comprising a transmitter and a receiver,

(a) the transmitter comprising:

a modulation unit which modulates data to be transferred with QPSK modulation;

a space-time coding unit which performs Alamouti space-time coding on a signal originating from the modulation to acquire two complex signals which are orthogonal to each other;

a first transmission unit which receives one of the space-time coded two complex signals; and

a second transmission unit which receives an other one of the space-time coded two complex signals;

each of the first transmission unit and the second transmission unit including:

a serial-parallel converting unit which performs serial-parallel conversion of a received complex signal;

an inverse Fourier transform unit which performs inverse Fourier transform on signals originating from the serial-parallel conversion; and

a transmitting unit which transmits the inverse Fourier transformed signal to an antenna having a predetermined polarization polarity,

a polarization polarity of the antenna used by the first transmission unit, ~~(hereinafter "first transmit antenna")~~ hereinafter referred as first transmit antenna, being orthogonal to a polarization polarity of the antenna used by the second transmission unit, hereinafter referred as second transmit antenna, ~~(hereinafter "second transmit antenna"),~~

(b) the receiver including:

a first reception unit which receives and processes a signal transmitted from the transmitter;

a second reception unit which receives and processes a signal transmitted from the transmitter;

a space-time decoding unit which performs Alamouti space-time decoding on a complex signal originating from processing in the first reception unit and a complex signal originating from processing in the second reception unit to acquire a single signal; and

a demodulation unit which demodulates the space-time decoded single signal to acquire transferred data with QPSK demodulation,

each of the first reception unit and the second reception unit including:

a receiving unit which receives a signal transmitted from the transmitter at an antenna having a predetermined polarization polarity;

a Fourier transform unit which performs Fourier transform on the received signal; and

a parallel-serial converting unit which performs parallel-serial conversion on the Fourier transformed signals to acquire a complex signal as a processing result,

a polarization polarity of the antenna used by the first reception unit, hereinafter referred as first receive antenna, ~~(hereinafter "first receive antenna")~~ being orthogonal to a polarization polarity of the antenna used by the second reception unit, hereinafter referred as second receive antenna, ~~(hereinafter "second receive antenna"),~~

(c) an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the first transmit antenna being approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the second transmit antenna.

2. (Currently amended) The communication system according to 1, wherein an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the second transmit antenna is approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the first transmit antenna.

3. (Previously presented) A transmitter in the communication system as set forth in claim 1.

4. (Previously presented) A receiver in the communication system as set forth in claim 1.

5. (Currently amended) A transmitting method comprising:

a modulation step which modulates data to be transferred with QPSK modulation;

a space-time coding step which performs Alamouti space-time coding on a signal originating from the modulation to acquire two complex signals which are orthogonal to each other;

a first transmission step which receives one of the space-time coded two complex signals; and

a second transmission step which receives an other one of the space-time coded two complex signals;

each of the first transmission step and the second transmission step including:

a serial-parallel converting step which performs serial-parallel conversion of a received signal;

an inverse Fourier transform step which performs inverse Fourier transform on signals originating from the serial-parallel conversion; and

a transmitting step which transmits the inverse Fourier transformed signal to an antenna having a predetermined polarization polarity,

a polarization polarity of the antenna used by the first transmission step, hereinafter referred as first transmit antenna, ~~(hereinafter "first transmit antenna")~~ being orthogonal to a polarization polarity of the antenna used by the second transmission step, hereinafter referred as second transmit antenna. ~~(hereinafter "second transmit antenna").~~

6. (Currently amended) The transmitting method according to 5, wherein transmission to a receiver which performs reception using two antennas whose polarization polarities are orthogonal

to each other, [[(]]hereinafter one of which is [[called "]]referred as first receive antenna[["]] and the other one is [[called "]]referred as second receive antenna,[[")]] is done, and

an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the first transmit antenna is approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the second transmit antenna.

7. (Currently amended) The transmitting method according to 6, wherein an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the second transmit antenna is approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the first transmit antenna.

8. (Currently amended) A receiving method comprising:

a first reception step which receives and processes a signal transmitted from the transmitter;

a second reception step which receives and processes a signal transmitted from the transmitter;

a space-time decoding step which performs Alamouti space-time decoding on a signal originating from processing in the first reception step and a signal originating from processing in the second reception step to acquire a single signal; and

a demodulation step which demodulates the space-time decoded single signal to acquire transferred data with QPSK demodulation,

each of the first reception step and the second reception step including:

a receiving step which receives a signal transmitted from the transmitter at an antenna having a predetermined polarization polarity;

a Fourier transform step which performs Fourier transform on the received signal; and

a parallel-serial converting step which performs parallel-serial conversion on the Fourier transformed signals to acquire a signal as a processing result,

a polarization polarity of the antenna used by the first reception unit, hereinafter referred as first receive antenna, ~~(hereinafter "first receive antenna")~~ being orthogonal to a polarization polarity of the antenna used by the second reception unit, hereinafter referred as second receive antenna. ~~(hereinafter "second receive antenna").~~

9. (Currently amended) The receiving method according to 8, wherein reception from a transmitter which performs transmission using two antennas whose polarization polarities are orthogonal to each other, [[()]]hereinafter one of which is [[called "]]referred as first receive antenna[["]] and the other one is [[called "]]referred as second receive antenna,[[")]] is done, and

an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the first transmit antenna is approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the second transmit antenna.

10. (Currently amended) The receiving method according to 9, wherein an inclination of the polarization polarity of the first receive antenna to the polarization polarity of the second transmit antenna is approximately equal to an inclination of the polarization polarity of the second receive antenna to the polarization polarity of the first transmit antenna.

11. (Previously presented) A program which allows a computer to function as the transmitter in the communication system as set forth in claim 1.

12. (Previously presented) A program which allows a computer to function as the receiver in the communication system as set forth in claim 1.